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Klugkist, A.C.

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Governance and Cooperation Aspects: the Case of PICA from a Librarian's Point of View.

PICA

For library automation in The Netherlands, the establishment of the PICA cooperative system was a milestone.

In 1969, five university libraries and the Dutch Royal Library signed an agreement to cooperate on the field of library automation. These libraries founded PICA as an independent non-profit organisation.

Over the years, the number of libraries participating in PICA has steadily increased. Not only university and research libraries, but also special and public libraries decided to make use of the PICA systems. Consequently, intensive debate took place between 1984 and 1985, about adapting the structure and legal form of PICA. This debate has led to the establishment of the Foundation Centre for Library Automation PICA on 1 November, 1985. The university libraries and the Royal Library have the right to appoint the majority of the board members of the PICA foundation.

PICA-Cataloguing

As a starting-point for library automation the PICA libraries, chose cataloguing, as understandably for large scientific libraries. That explains the acronym, PICA, which stands for **P**roject on **I**ntegrated **C**atalogue **A**utomation. Together, the founding university libraries and the Royal Library own many millions of titles. A machine-readable catalogue is an absolute precondition for automating the other parts of the libraries' organisation. And without an automated catalogue, little immediate improvement in services could be delivered to the end-user. Central to the project was the idea that one joint database (GGC) of title information could be built at a national level. A title entered by one library could then be retrieved in a simple manner by the other libraries. Also, it was agreed that the central database be fed with the title information from the national bibliographies of other nations. Every week, title information from OCLC, the Library of Congress, the British National Bibliography, the Deutsche Bibliothek, and of course the Dutch Bibliography is read into the database.

General bibliographic information about the publications that are to be catalogued can easily be

retrieved from the PICA-database in around 80% of all cases; nearly 20% from the information in the aforementioned bibliographic files, around 40% from titles already entered by other participants, and a little under 20% by copying title information while processing new editions/imprints. The joint database (GGC) now contains over 10 million titles.

The number of libraries using the joint database for cataloguing is now over one hundred. These include university libraries, polytechnic and college libraries, public libraries, and government department libraries. Libraries from various other institutions and companies also use the PICA-cataloguing system. On average, the libraries working with the PICA-cataloguing system perform around 125,000 transactions a day. The number of publications catalogued each year is around one and a quarter million.

Since 1993 most of the university libraries in The Netherlands have begun subject indexing their new acquisitions on a shared basis using the newly developed Dutch System for Shared Subject Indexing (GOO). This system is based on the same cooperative idea as the author/title cataloguing of publications. The GOO-system is a combination of a rough basic classification (consisting of around 2000 basic classification codes, which together form the Dutch Basic Classification) and subject headings (thesaurized, unlimited in principle, and together forming the Shared Subject Headings Thesaurus (GGT)). When a particular publication has been catalogued by a particular library using the Shared Subject Indexing System (GOO), other libraries that also want to purchase this publication benefit.

Now GOO is well established, it is possible to derive important policy information relating to the profile and building of collections in The Netherlands from the GOO information entered in the central PICA database. This information is also important for the national coordination of collection building. The advantage of GOO for library users is that they can use the same approach for searching in the catalogues of all PICA-libraries

The central database of PICA also forms the basis for national interlibrary lending. More than 200 libraries are now connected to the database for the purpose of handling their interlibrary loan requests. Since 1994 it is possible to be connected via PICA to the interlibrary lending system of the British Library Document Supply Centre. Recently also connections to other interlibrary lending systems are realized (LASER in the UK, SUNIST in France, BRZN in Germany).

PICA Local Library Systems

When it became clear in the 1980s that the chosen formula for joint cataloguing worked satisfactorily, the automation of the other library procedures could proceed on a firmer basis. This had been intended from the start, but without a good database of title information, the effectiveness of further library automation is minimal.

Around 1983, the **Acquisition System** for books and periodicals, (and for the registration of periodical issues) was developed. The following year, 1984, saw the arrival of the **Lending System** and the **Online Public Acces Catalogue (OPAC)**.

Important features of the PICA cooperation system are integration and networking: by the use of the network-infrastructure the central and local PICA library systems can communicate with one another in a transparent manner, and library operations that used to be separate from each other can now be performed as one routine.

The number of Dutch libraries using local library systems is more than 25, including eight university libraries, the Royal Library in The Hague and the library of the Royal Academy of Sciences. Since 1993 several German Bundesländer and the three branches of the Deutsche Bibliothek in Frankfurt, Leipzig and Berlin also decided to use the central and local PICA library systems.

Online Retrieval Systems (ORS).

PICA also functions as a host organisation for various data files, such as the GLIN-database for 'grey' literature in The Netherlands, the AVM database for audio-visual media, files of title information and brief summaries of Dutch magazines (DOTA) and the publishers' file NESTOR. About 200 organisations have passwords for one or more of these online retrieval files.

Network(ing) Developments

For obvious reasons, PICA has always been active as a developer and user of networks. To safeguard communication with the associated libraries a (separate) network was built for their use, initially through dial-up and leased lines,

later through Dutch PTT Telecom's DATAnet and the Dutch research network SURFnet. The PICA system has been successfully linked with other library systems, such as the ALS system of the Public Library of Rotterdam and the GEAC system of the Utrecht State University. Work has been done to link the PICA system to the London and South-Eastern Region (LASER) library system and to the French SUNIST/DBMIST system, as part of the CEC supported ION (Interlending OSI Network) project.

The Relationship between PICA and Surfnet BV

PICA's activities inevitably led to increased contact with the Dutch research network, SURFnet. Both organisations administered a data communications network for roughly the same groups of users. They do not completely coincide, but they do largely overlap. Therefore, in 1989, PICA and SURFnet made an agreement which made PICA's network a part of SURFnet's infrastructure. The present PICA network has fully blended into the SURFnet's infrastructure. Thanks to this integration, libraries will not only have access to the central PICA systems in Leiden and to each others' library systems, but also have SURFnet's other network services at their disposal.

Cooperation with SURFnet was an important step towards the development of an open library network in The Netherlands, based on international standards. Via SURFnet scientific libraries have access to all international networks for higher education and research, such as the UK JANET, the German WIN, the American Bitnet and the world-wide Internet.

The Open Library Network (OBN) in The Netherlands

In 1989 PICA started with the development of the Open Library Network (OBN) project. OBN was developed by PICA, with the financial support of SURFnet, the scientific research network organization in the Netherlands. The concept of OBN is that the systems of various libraries (starting with the libraries with a local PICA-library system, but also the libraries with local library systems of other suppliers, such as ALS) are linked online with each other and with the central PICA-systems.

The mutual links are through the scientific research network of SURFnet. Within this research network PICA implemented the OBN as a logical network. It is end user-oriented and uses a uniform end user-interface, which means that a user can search the online catalogues of all the

libraries connected with the OBN and the central PICA-databases in the same way as his own online catalogue.

Since 1993 the OBN has been expanded with direct user access to the PICA file Online Contents database, a large national database with catalogue entries of articles from the 14,000 (currently) most requested periodicals in the Netherlands.

Since the middle of 1994 the Dutch Central Catalogue, containing the holdings of more than 200 Dutch libraries, is also directly accessible for the end users.

Through the catalogues accessible by means of the OBN (including the Online Contents Database and the Dutch Central Catalogue) users can directly make a loan request. Moreover, the Online Contents Database is connected with a document delivery system, called RAPDOC, through which articles in an electronic format or photocopies of articles can be sent on demand within respectively 24 or 48 hours to the users at their work- or home address.

Because of the infrastructure of the OBN the Dutch university- and other scientific libraries, each holding a number of books ranging from some hundred thousand to a few million, and together managing tens of millions of books and periodicals, are starting to function as one big Dutch Scientific Library. Their users can look at the combined collections of the libraries working together in OBN as if it were one large collection, from which the desired publications can be requested for loan.

In order to make this a controllable process and to realize a quality service, these libraries have declared their willingness to cooperate. They are prepared to comply with a number of organizational conditions, of which I will speak more later on.

Since September 1994 the First Search files of OCLC have experimentally been made available to users through OBN as well. Besides that, OBN-like links have been made with the British Library, the English LASER system, the French SUNIST, the Lower Saxon BRZN and the files of the Research Library Group. These links, however, are, for the time being, only of interest to interlibrary loan traffic and to cataloguing and are not accessible to users by themselves.

At this moment PICA is in the process of developing a standardized Z.39.50 interface with which not only the above mentioned online catalogues can be searched uniformly, but other bibliographical databases as well, such as the database EMBASE of Elsevier Science Publishers' Excerpta

Medica. The fact that extensive abstracts form a part of that database makes it necessary to expand this interface with a number of searching and retrieval facilities; so, in addition the Newton Search Engine of OCLC is used. The first version of this interface has been operational since October 1994; an updated version will be available in the next months. The implementation of a graphic user-interface (GUI) is planned for 1996.

OBN in an International Context

Some Bundesländer in Germany, the Norddeutsch Bibliotheksverbund and the Deutsche Bibliothek have, as I wrote before, decided to implement the central and local PICA-systems in their libraries. Because of this expansion of the PICA-system to Germany the OBN facilities will also be available there and cooperation with the Dutch OBN libraries will be possible.

Technically this does not give any problems, organizationally however, some things have to be worked out more thoroughly. A first impulse to the cooperation between the Netherlands and Northern-Germany was, in the middle of 1994, given in Göttingen. A project plan for the realization of this cooperation is at the moment in its final stage.

I hope that the application and connections of open library networks will come about in all parts and countries of Europe. In this way the concept of a European Scientific Library could be given form, within which the libraries connected to such an open network will provide services to each other.

Goal and Content of OBN

The goals of the project were:

- * The establishment of a new version of the PICA OPAC.

- * The development of a **virtual terminal protocol** based on OSI-standards and on the use of **network software** built from products based on standard approaches such as TCP/IP (Transmission Control Protocol/Internet Protocol), PCSA (Personal Computer System Architecture) and Ethernet. This made possible complete integration into the infrastructures of

university networks.

* Introduction of the Intelligent Bibliographic Workstation (the **IBW**) for the benefit of library employees. IBW's are personal computers equipped with special library software, using which many library operations to be performed more quickly and efficiently. Staff using the IBW can adjust it to their own preferences. Many transactions that used to be handled by mainframe or minicomputer, now take place on the PC, thereby reducing data communications traffic.

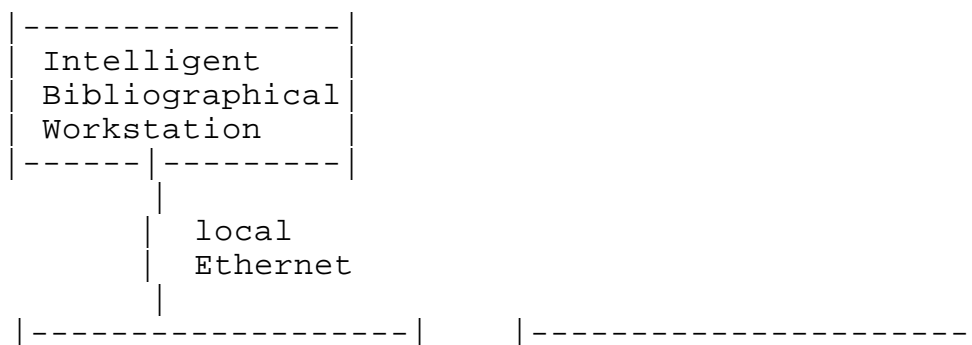
* Introduction of **integrated cataloguing**. Via the local library system and SURFnet, a workstation can be connected directly to the PICA's Shared Cataloguing System in Leiden. By means of an **update mechanism** the titles catalogued are directly added to the local Online Public Access Catalogue and thus immediately become visible to end-users.

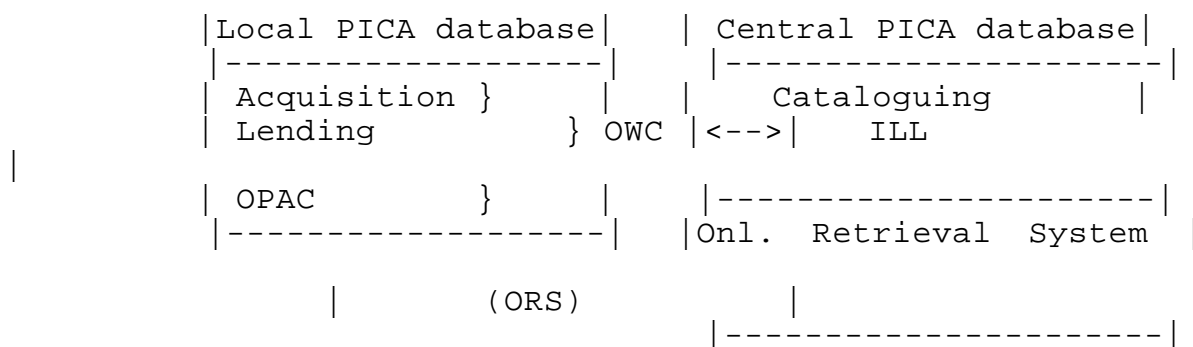
* The more easy development of local library files using the revised **local cataloguing functions**.

* The **integration** of the intensively used **PICA-mail** into **SURF-mail** and the electronic mail facilities that go with it. Employees of PICA libraries can also send messages to colleagues working for non-PICA libraries and use the other SURF services.

Implications for Library Staff

Through the Intelligent Bibliographic Workstation (IBW) authorised library staff has at their disposal all central and local PICA library functionality. This applies to the central PICA systems (Cataloguing System, ILL system and Online Retrieval System) as well as to the local ones (Acquisition, Lending and OPAC). The following schematic overview presents the working method.





As shown, three databases can be used: 1) the central PICA database (cataloguing + ILL) 2) the ORS database and 3) the local database (ACQ, lending, OPAC). The latter is also referred to as Online Work Catalogue (OWC).

The OWC is fed in two ways: Firstly, from the central PICA database, by means of the online update mechanism. Data (catalogue entries) entered into the central database by library employees from Groningen are transferred online to the local database by the update mechanism and are therefore immediately available at local level.

Secondly, data that are only of local interest are entered directly, and exclusively, into the local database (OWC). End-users can only see the relevant public data. The administrative data that are of importance only to library-technical organisation or management of the library are visible only to library staff.

The OPC is menu-driven, but national and local library functions for library staff are command-driven and are offered via an identical user interface. In other words: there is one general, basic command structure with specific commands for each specific part of the system. Quick switching between procedures is possible: from online (work-) catalogue to lending system, from the library's own lending system to the national interlibrary lending system, from lending system to cataloguing system, and so on.

When **ordering** publications, for example, acquisition staff first look up general bibliographical data in the national PICA database, then transfer these to the online work catalogue, add the administrative data necessary for ordering (supplier, library destination, credit data and such-like). If the bibliographic data about a publication to be ordered are not yet in the national database, a (brief) catalogue entry is first made, after which the same procedure is followed. Because a high percentage of bibliographical data can be derived, this method is very efficient. Moreover this procedure offers the possibility of

achieving national coordination of collection building in a simple manner. During acquisition it can easily be checked if the required publication is already held or is on order somewhere else in The Netherlands.

Cataloguers, making **catalogue entries**, can benefit from the bibliographic data already present in the central PICA database and add local data to these, after which they are transferred directly to the local database.

Library organisations with decentralised branches can also work with each other in an integrated way using the PICA library systems. For instance, faculty libraries at Groningen State University are able to submit orders electronically to the university library's central acquisition department. The same applies to loan requests. The local system can be parameterised in such a manner that every decentralised library can "translate" its own library loan rules into the lending system. This possibility by the way is not preferred at my own university, as we wish to pursue a uniform lending policy for the entire organisation.

Thanks to the OBN, library staff will be able to work with greater speed and efficiency. However, in view of the increased functionality of the library systems at their disposal, libraries have to reconsider their organisational structures. Will the methods now used be as appropriate in the future ? Should the compartmentalisation of work processes be maintained (concentration of expertise) or should various work processes be integrated (job enrichment). There is not one clear answer to questions of this kind. Libraries differ too much among themselves in size, in specification of functions, and in services required of them.

Implications for End-users

Responding to the implications OBN will have for library work is not easy; it is even harder with respect to the end-users. Since the full implementation of OBN the end-user in The Netherlands has the following facilities:

- searching through their own library's catalogues and files;
- borrowing, reserving, and renewing the loan of publications from their own library;
- searching through catalogues and files belonging to other libraries participating in OBN;
- calling for publications from these other libraries' stock;
- searching through PICA's central online retrieval

databases;

- printing and downloading information resulting from the above operations;
- searching in PICA's National Central Catalogue, containing the holdings of more than 200 Dutch libraries;
- calling for publications via the National Central Catalogue;
- searching in PICA's Online Contents Database with catalogue entries of nearly 5 million articles from the 14.000 currently most requested periodicals in The Netherlands;
- calling for photocopies or electronic copies of these articles by making use of the RAPDOC document delivery system, that is connected with the Online Contents Database.

Thanks to all these facilities end-users have access to a wealth of information and many possibilities to get the books and articles they have found in the above mentioned databases and catalogues.

Organizational Aspects and Conditions of Cooperation within an Open Library Network

It is evident that an OBN has far-stretching consequences for the library and for library work from an organizational point of view. If libraries want to cooperate within the context of an open library network, then, in my opinion, a number of organizational aspects should be taken into account and a number of conditions should be met.

When formulating these aspects and conditions, I am undoubtedly strongly defined by my own experiences with the Open Library Network realized by PICA in The Netherlands; yet I hope my remarks can be of use when an open library network is implemented somewhere else.

1. General policy aspects of cooperation within an OBN

In order to correctly take part in an open library network the libraries in question need to form a cooperative. In this framework they have to define a library policy, in which the library services to be provided will be sharply defined and the limits of these services will be made clear.

When formulating this policy the willingness should be always there - in spite of the various managerial-organizational situations - to see the autonomy of each library in perspective and to attune service as much as

possible to that of the other partners, so that, in principle, the same policies towards users and a uniform library service are created.

Moreover, it should be possible to define special forms of cooperation within a very large cooperative.

It may be important, for example, that **various kinds** of libraries are defined (university-, public-, special libraries, etc.)

Furthermore, it should be possible to provide **thematic** (for example, chemical or medical libraries) subdivisions within a cooperative.

In very large OBNs it should be possible to form smaller **regional** OBNs. This can be brought about by using for example area-codes in the central database. In The Netherlands we have the regional Amsterdam network ADAMnet. Another possibility is the integration of the catalogues of a number of institutions in one local library system.

2. User registration, authorization and identification

Within an OBN-cooperative one should be able to differentiate the services to be provided in such a way that these are accessible to different categories of users with different levels of authorization.

In the first place a distinction should be made between registered and non-registered users.

Non-registered users are users who are looking for a connection through a work station with a(nother) OBN-library without the wish or the possibility to identify themselves. This group is solely offered consulting facilities, insofar this does not lead to a bad performance of the library system in question because it burdens the system too much.

Registered users are users who have been authorized by a participating OBN-library. A user is registered in the OBN on the moment he has given his lending number at the system's request - and possibly his password and pincode - and this information has been validated by the system. In principal, this identification takes place only once per OBN-session, a session being defined as: maintaining a connection with the OBN-database in question.

Every library is responsible for the authorization of

its individual categories of users. The subdivision of users into various categories should correspond with the subdivision in its own local (lending-)system and should agree with the subdivisions within the other OBN-libraries. This goes for the granting of codings as well.

This means that - on the basis of lending permission in the local system of the user - OBN-permissions can be generated for every user category in the systems of other OBN-participants.

The decentrally granted level of authorization should in principle be determining for the policy towards users of every library participating in the OBN cooperative.

3. User services

In order to use the services of the other libraries of the OBN-cooperative the user has to be a member of at least one library organization within that cooperative.

3.1 Searching facilities

Access to and searching in the internal OPAC and the OPACs of other OBN-libraries should basically be free and users should not be charged for this facility.

In the Dutch OBN every library makes available in its local library system 10 logical channels (= 10 simultaneous access facilities) for users of other OBN-libraries within the cooperative.

The Dutch Central Catalogue and the central Online Contents database of PICA are also made available for free to users by the OBN-libraries. PICA does, however, charge the libraries a certain amount of money for every logical channel. At the moment the rate is f 50,000 for ten logical channels.

For reasons of security and controllability a user in an external OBN-database cannot dial-direct to another external database. The moment the user wants to access another external database he returns to the OBN-menu of his own OPAC and can make a new choice from this menu.

It is recommendable that every library should develop for itself - depending on the spatial situation - a policy for the question which databases should be made available on which work stations, for example:

- *work stations within the library*

- * only the local OPAC
- * local OPAC + local subdivisional databases
- * OPAC + (local subdivisional databases) + access to OBN
- * other OBN-databases only
- * etc., etc.

- *work stations on the place of work*

- * in principle all facilities

If the institution has a so-called campuswide information system (CWIS) the OBN-databases and other possible databases should be integrated within this system as a logical network. From the user's point of view there should not be a completely distinctive library information system apart from the CWIS.

3.2 Making publications available

An open library network is only of extra value to the user, if besides searching facilities, lending facilities and document delivery facilities are offered as well. This facility distinguishes an open library network from networks such as Internet and navigation services such as Gopher and World Wide Web.

Making publications available the following principles could be followed:

3.2.1

Taking for granted that, generally speaking, interlibrary loan traffic and therefore direct loan requests by users through OBN, will cost money, the user has to open a deposit in advance with his own library. In The Netherlands this deposit is called the IBL-account. The system of the IBL-account has been integrated in the OBN software.

Another possibility is credit cards following the example of various document delivery organizations in the United States.

The costs of the loan transactions of the user are deducted from his account; his own library guards this deposit and gives the user the information he requires, or provides necessary directions.

3.2.2

Monographs are always sent to the library of which the user is a member, and never directly to his home- or work address. The mother library then lends the monographs received from other libraries to the user, after the data of the book in question and other necessary data have (temporarily) been recorded in the lending system of that library. (In the Dutch OBN such a temporary record is automatically made). After the period of loan is expired, the receiving library takes care that the book is returned in a correct fashion to the library who lent the book.

3.2.3

Articles preferably are sent in photocopy directly to the home- or work address of the applicant by the library who delivers these articles. When scanning and electronic mail is involved, the articles should be sent to the electronic address of the applicant.

3.2.4

Electronic documents are delivered on the same conditions as photocopies of articles and can either be sent electronically to the address of the applicant's work station or printed and sent to an address stated by the applicant.

When large texts are involved, this form of service is becoming a kind of publishing on demand.

Of course, good information in advance on the costs of the delivery of electronic texts is necessary.

4. Scale of charges/financial settlement

Clear instructions should inform the users which services are offered on which conditions within the OBN. One of these conditions may be the opening of the deposit (IBL-account) mentioned in paragraph 3.2.1.

After opening the deposit a certain amount of money is deducted from it for every loan request. Which charges a library should want to make, can be determined by the library itself and can be assessed by defining the deposit parameters for each loan transaction and document type (monograph or article).

Even though every library is free to stipulate the scale of charges for their own users, it is advisable to harmonize this within the OBN as much as possible.

For the charging of IBL-services it should make no difference how the required document is delivered (by mail, fax or electronically). It is possible, however, to charge extra for rush orders.

The fulfillment of IBL-requests (monographs, articles or electronic documents) is financially settled by the delivering library with the library of the end user according uniform rates.

The stipulation of uniform rates for the mutual settlement of IBL-costs between libraries is in my point of view an important condition for the functioning of the IBL-system within an OBN, even though every library is free in stipulating the scale of charges with respect to their own users.

The above mentioned also means that there only is a financial relation between the user and his own library, and no such a relation between the user and the delivering library.

A clearinghouse system for the mutual settlement of IBL-costs between the libraries participating within an OBN on the basis of uniform rates prevents the sending to and fro of an endless number of bills for small amounts of money. Within the Dutch OBN such a system has been implemented and will be operational very soon.

5. Technical aspects

It is not necessary for the participation within an OBN that every library should have the same local automation system (for example PICA), but it is essential that the participating libraries use software packages with (international) standards and that their computer configurations are based on a client/server architecture.

An OBN should basically be open to every library with a local library system of their own, and they should give other libraries access to their databases on a reciprocal basis.

When various OBNs are connected with each other, a central gateway structure is preferred, especially from the point of view of regulation of loan requests and document delivery transactions. In the Northern German-Dutch OBN-cooperatives, for example, the central configuration of the BibliotheksRechnersZentrumNiedersachsen in Göttingen (BRZN)

and the central PICA-configuration in Leiden will function as central gateways between the OBNs in Northern Germany and The Netherlands.

Final conclusions

The managing director of PICA, Look Costers, introduced in his lecture at the symposium 'Library Networking and Electronic Media' in Bielefeld, held in February 1994, the concept of Controlled Network Information Environment and mentioned in connection with this two levels of service. The first level of service refers to the services the library itself can control and directly offers to their own users.

This concerns on the one hand the systems used by the library itself and on the other hand the (local or external) databases and information services the library provides to its users on its own and via a standard user-interface.

On the second level the library provides services within the framework of the cooperative of which it is part through an open library network. For the provision of these services my former remarks are meant.

According to Costers, Internet could be considered a third level of service, but - as he justly remarks - it does not form a part of the Controlled Network Information Environment. "It forms an uncontrollable infrastructure, which causes the quality of the service not to be guaranteed".

In my opinion the possible use of electronic access to databases within and especially outside the library as such, is very often overrated. If these possibilities are not connected with facilities in the area of services, preferably directly to the users, profit is small and the effect very often even negative: being able to see where all kinds of information are, but not being able to get this information, does not lead to a large user satisfaction. This is the reason why libraries have the task to apply in a practical way the new assets of the information technology and to integrate these in such a fashion within the library policy that user service is brought to a higher level.

Alex.C. Klugkist, director of the University Library of the Groningen University, The Netherlands, 1th Juin 1995.

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